



Linux

CPT-201

About Me

- Devon Hubner
- People call me Devo
- I started used Linux in 1996 with Slackware Linux 3.1.
- Before switching to Linux I was a heavy user of OS/2 Warp and MacOS Classic.
- I have a Bachelors of Science in Information Technology degree from Marist College in Poughkeepsie, NY.
- When I was in College, everybody used Linux on their Desktop.
- There were a few people dual-booting Windows on their desktops so they could access some specific games that only ran on Windows.
- At that time, everybody was playing either Unreal Tournament or Worms. Unreal Tournament ran better under Linux than Windows. Unfortunately Worms was Windows only.

About Me

- When I graduated I became a Linux Systems Administrator
- First for a manufacturing company.
- Next for an Internet Company. We developed custom CMS websites for our clients, primarily using Drupal or Joomla, which we would host in datacenters or the Amazon Cloud.
- When I moved to Maine I went to work for MaineToday.com where we hosted custom PHP and Drupal websites.
- I now work for a software development company based in New York City as a Cloud Systems Administrator.
- I use Linux on all my Desktop and Laptop computers.
- I have my Wife and Mother using Linux. My Wife has told me that she prefers Linux to Windows 7 and prefers LibreOffice to MS Office 2007/2010 - mostly because of the stupid ribbon.
- I have taught courses at three different colleges on topics of: Internet Programming, Networking, Databases, Information Security, and Linux. I recommend you signup for Advanced Linux in the Spring semester.

How to Contact Me

- Cell Phone: 207-809-7949
- eMail.: devon@hubner.org
- AIM: DevoKun
- Skype: DevoKun
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- Identi.ca: DevoKun
- Twitter: DevoKun

Syllabus

Website

<http://cpt201.hubner.org/>

Textbook

RHCSA/RHCE Red Hat Linux Certification Study Guide (Exams EX200 & EX300), 6th Edition (Certification Press)

Paperback: 1072 pages

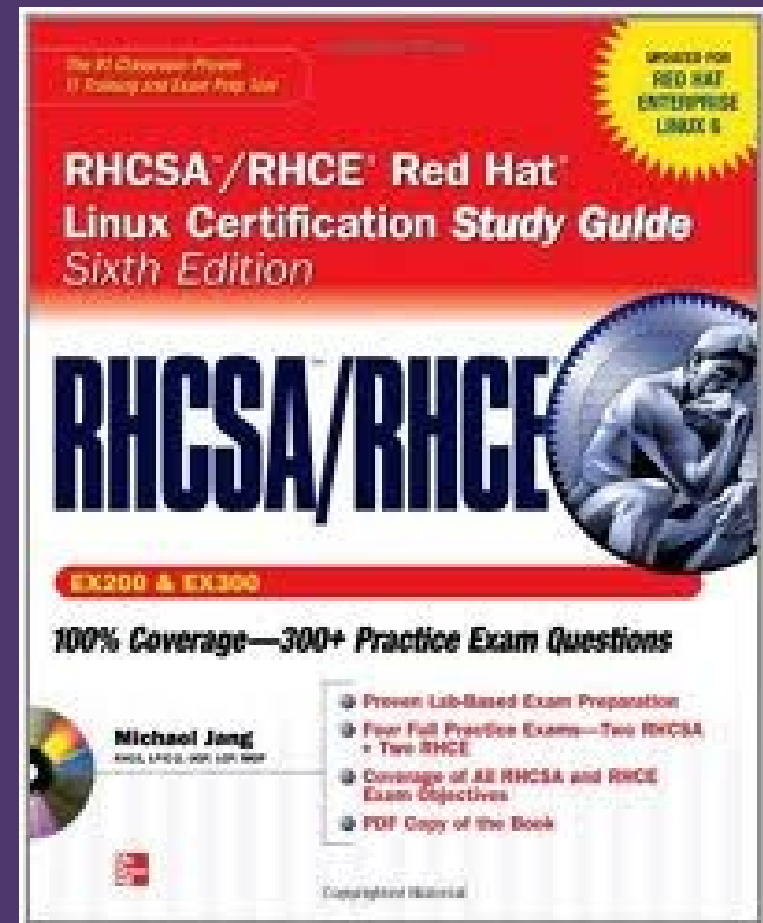
Kindle Edition is Available

Publisher: McGraw-Hill Osborne Media;
6 edition (June 17, 2011)

Language: English

ISBN-10: 0071765654

ISBN-13: 978-0071765657



File Formats

- All course work must be submitted in free and open formats. **No Microsoft Office formatted documents will be accepted.** Please use the Open Document Format (LibreOffice ODF) or PDF. When in doubt, use LibreOffice and save the file.
- **Images and Screenshots:** SVG, JPEG, PNG.
 - no images embedded in a m\$ word, powerpoint, or RTF document will be accepted
 - don't embedd images in ANY other document, even if it's LibreOffice. If you send a screenshot, that screenshot should be a PNG.
- **Word Processor:** Open Document Format (LibreOffice ODF)
- **Spreadsheet:** Open Document Format (LibreOffice ODF)
- **Presentation:** Open Document Format (LibreOffice ODF)
- **Charts:** SVG, Dia, Open Document Format (LibreOffice ODF)
- **Documents:** Open Document Format (LibreOffice ODF), PDF
- PDF's are quickly and easily created from LibreOffice

Homework Assignments

- Homework Assignments are due at the beginning of the following class.
- Homework is to be completed on an individual basis. You may not work as a group on homework, unless otherwise stated. This basically translates in to: "Don't copy and paste."
- Don't solely rely upon Google for homework answers. In the computer world, the same acronym can mean many different things in different contexts. "Do the reading and answer the questions."
- No late homework is, or will be, accepted.
- If you miss class, you are still responsible for homework.
- The ideal distribution method for homework is eMail. eMail insures that both you, and I, have a record of the submission. Turning in Paper is OK, but I am not very good about keeping track of physical paper.
- Homework is counted as a boolean: "completed, not completed". You get credit for completing homework, no credit for not completing homework. Don't try to submit all your homework the day before the final, it will not be accepted. Do your best and submit the homework on time.

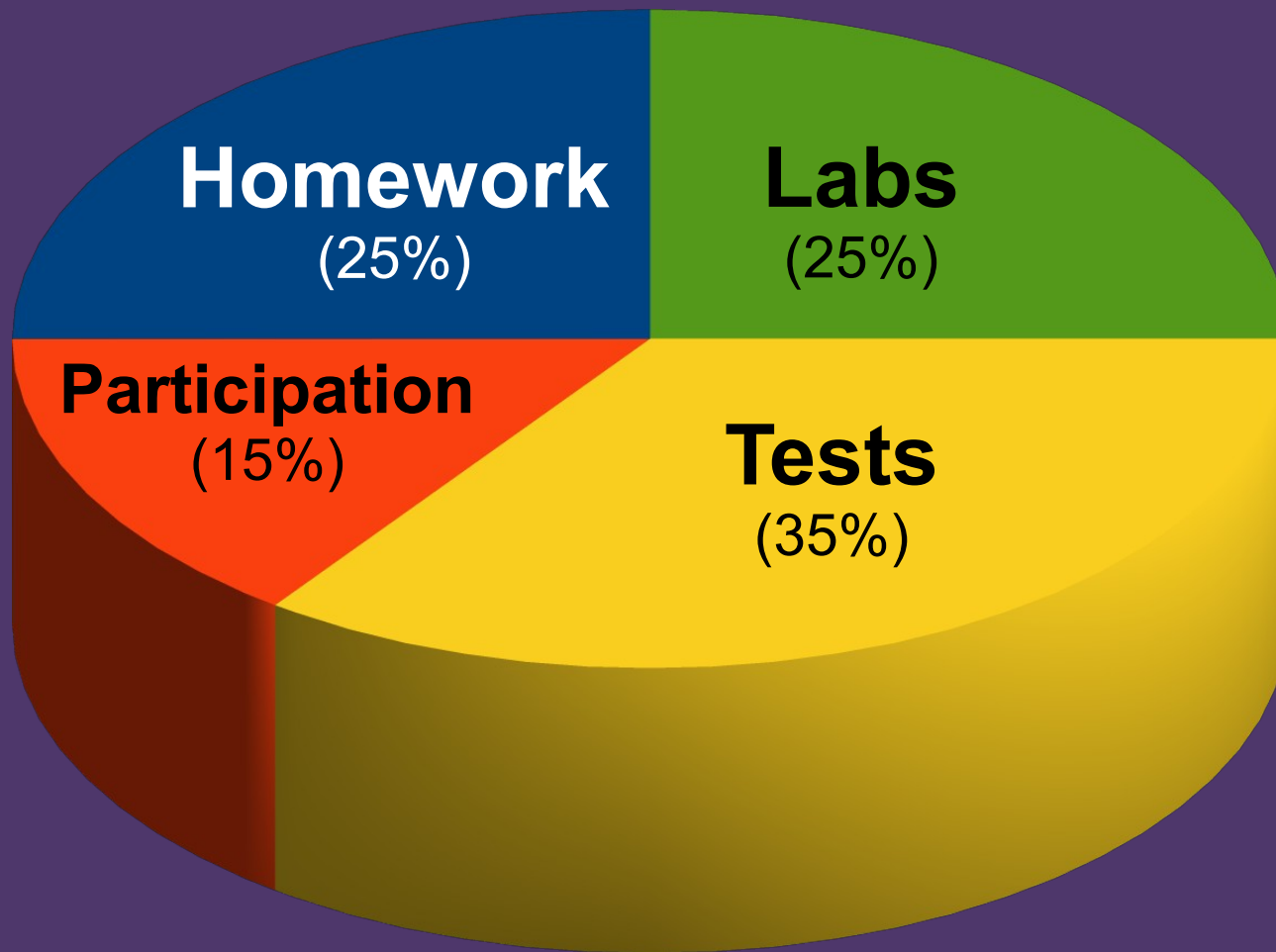
Attendance

- Attendance will be taken on a regular basis. Every student is responsible for anything covered in class, even if it is not listed in the syllabus. This includes announcements of assignments or test dates, so if forced to miss class, be sure to contact the instructor and ask to be informed of that day's content. A student will be allowed a total of 3 unexcused absences (which equals 20% of the class meeting time), after which the student automatically fails. An excused absence is one where the student informs the professor ahead of time that they will not be able to attend class.
- Being absent means depriving yourself of class. You are welcome to miss class when you need to. Naturally, it is a professional courtesy to notify the instructor that you will not be attending class. Please do not wait 10 minutes before class, or especially after class, to notify the instructor of your absence.
- In summary, if you miss class that is your business, yet you are responsible for all the material and you must notify the professor previously. The only permitted absence is one which has been previously announced.

Cancellations

If you suspect a class cancellation due to weather or any other reason, call my number and/or check the Central Maine Community College website. Class will generally be held, if in doubt, assume that class will be held. I will normally be in class on time. If I am not, you should wait at least 15 minutes before leaving. If I am unavoidably detained, I will normally call and have the class instructed to either wait, or go home.

Grading



Why Linux ?

TECH JOBS NEWS

The Latest Data on Linux-Specific Tech Jobs Thursday, February 16, 2012

LINUX TALENT IN HIGH DEMAND

EXCERPTS FROM THE 2012 LINUX JOBS REPORT



81% OF
RECRUITERS SAY
HIRING LINUX
TALENT IS A
PRIORITY.

63% OF
EMPLOYERS SEEK
MORE LINUX TALENT
RELATIVE TO OTHER
SKILL AREAS.



85% OF
HIRING MANAGERS
SAY LINUX TALENT IS
HARD TO FIND.

NEARLY 1/3 OF
COMPANIES ARE OFFERING
ABOVE NORMAL PAY
INCREASES TO LINUX PROs.



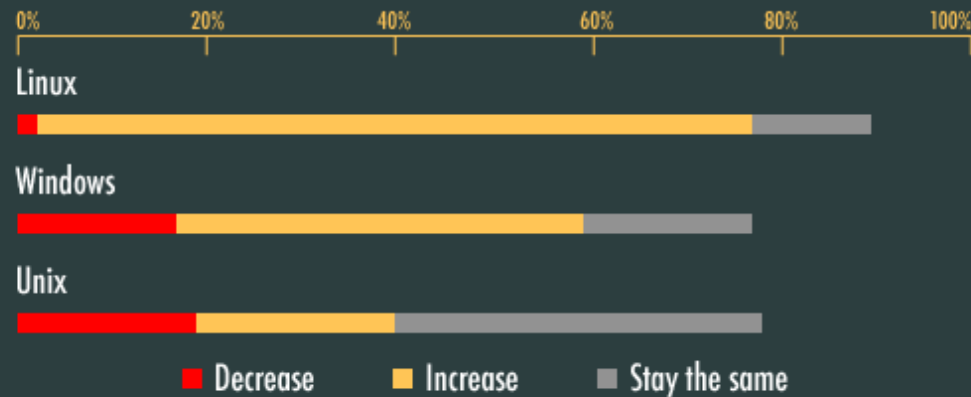
Dice

THE
LINUX
FOUNDATION

LINUX USE AMONG THE WORLD'S LARGEST ENTERPRISES

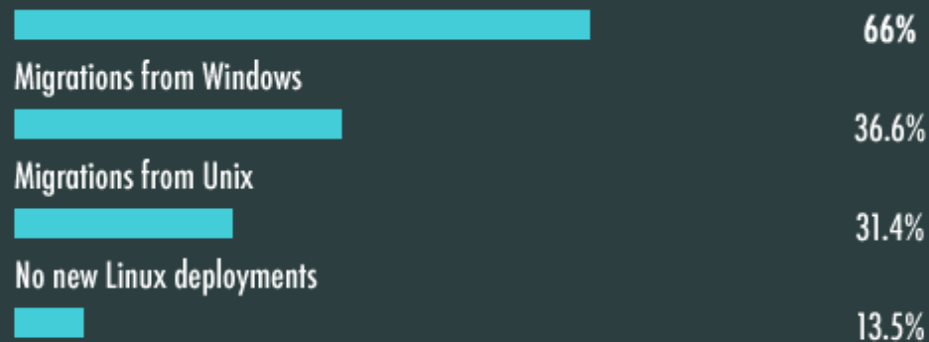
EXCERPT FROM THE LINUX FOUNDATION REPORT:
LINUX ADOPTION TRENDS: A SURVEY OF ENTERPRISE END USERS

Users are adding more Linux than any other OS over next five years.



*More users are migrating to Linux from Windows than ever before.
Linux is the also the platform choice for new/"greenfield" deployments.*

Brand new applications/services, greenfield deployments



Three-Month Snapshot:

LINUX JOB DEMAND

Data sourced from Linux.com Jobs Board, September 1 - November 30, 2011

HOT SKILL AREAS + LINUX JOB TYPES

TOP 5 MOST REFERENCED SKILL AREAS

- 01 JAVA
- 02 ANDROID
- 03 C++
- 04 J2EE
- 05 MYSQL

THE MOST POPULAR LINUX JOB TYPES



LINUX JOBS BY LOCATION

"WHERE THE JOBS ARE"

AROUND THE WORLD



- 70% UNITED STATES
- 14% AUSTRALIA
- 13% GERMANY
- 2% UNITED KINGDOM
- 5% CANADA
- 5% NETHERLANDS

IN THE UNITED STATES

THE DARKER THE AREA, THE MORE LINUX JOBS AVAILABLE



Linux Distributions





Slackware

Originally
a German
Translation
of Slackware



RPM
Based



RedHat
became
Fedora



Fedora

RHES
Based on
Fedora



Enterprise

Minimal
Security
Enhanced



Owl

CentOS
Is Binary
Compatible
With RHES



CentOS



Debian

Ubuntu
Based on
Debian



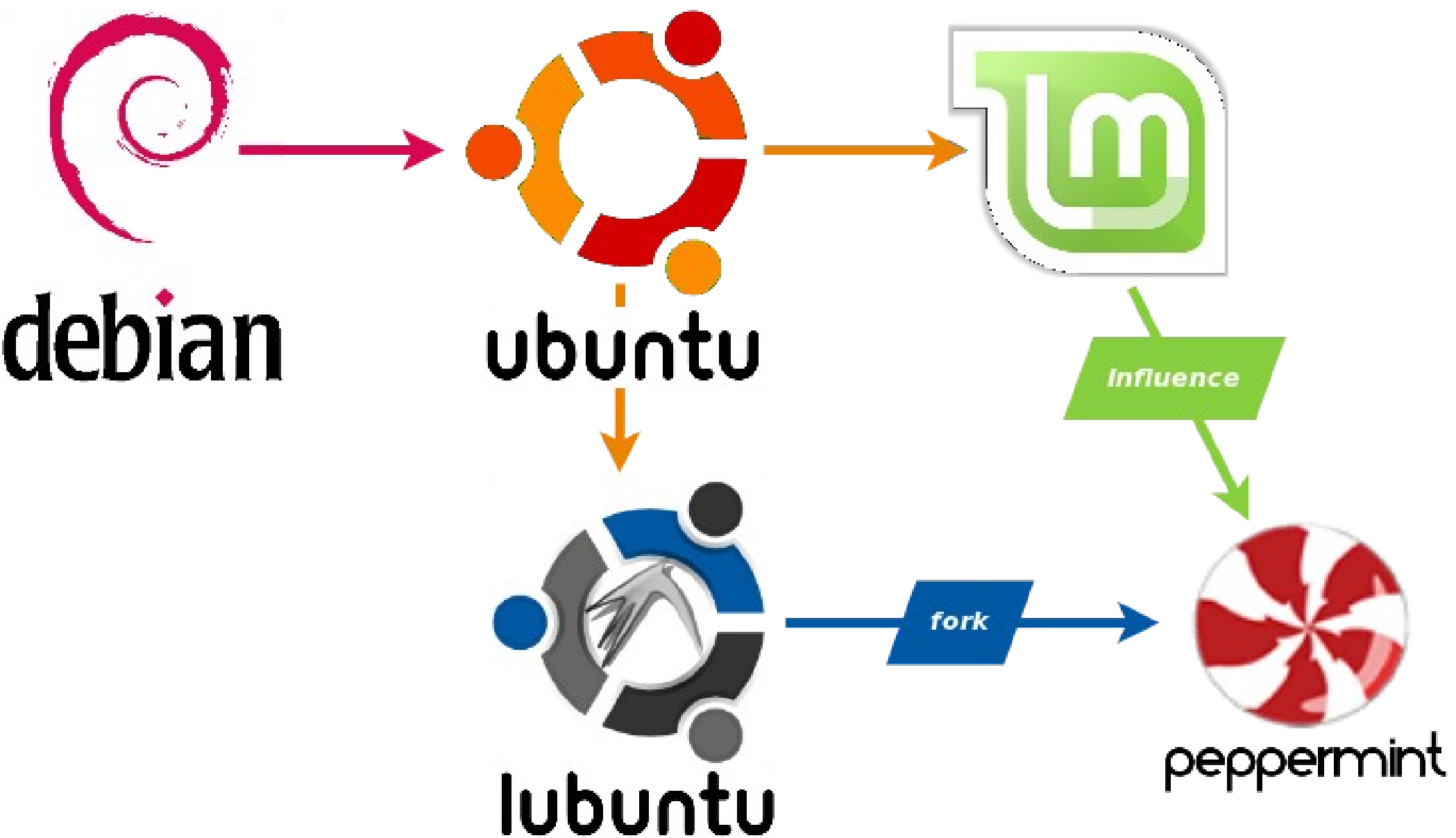
Mint
Based on
Ubuntu



Mint



Gentoo



Why 6 RED HAT ENTERPRISE LINUX?





RHCSA

redhat.®

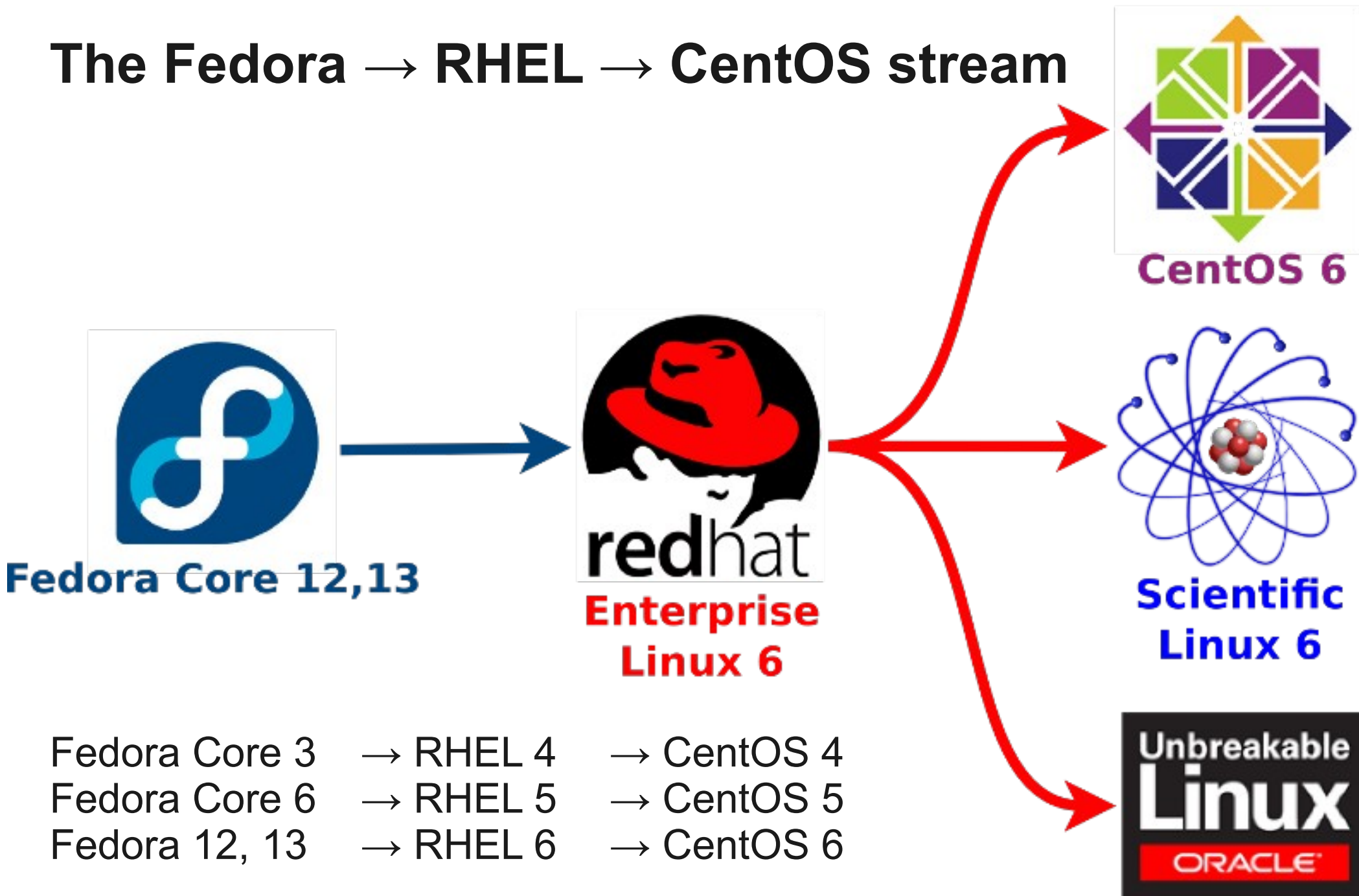
**CERTIFIED
SYSTEM
ADMINISTRATOR**

*RedHat Certified Systems
Administrator*

*If you want to be a linux systems
administrator, then make it your
goal to get redhat certified.*

Why CentOS ?

The Fedora → RHEL → CentOS stream



Red Hat CEO Likes CentOS Linux. Oracle Linux, Not So Much.

Having CentOS out there is a good thing. It broadens our community. There are people that don't need the things that we have in subscription and it's great that there is an offering build off the same code base.

Whitehurst added that Red Hat works with CentOS and have made changes to the way code is released to make sure it doesn't impede the CentOS flow.

That said, Whitehurst is still interested in selling RHEL to those CentOS users that might need it.

<http://www.internetnews.com/blog/skerner/red-hat-ceo-like-centos-linux-oracle-linux-not-so-much.html>

IBM Supports Linux 100%

Watch Video

Let's Install CentOS

Get a Hard Drive for your Desktop

Get a CentOS 6.3 64-bit DVD from Devo

Refer to RHCSA Study Guide

Chapter 1 and Appendix A

Welcome to CentOS 6.3!

Install or upgrade an existing system
Install system with basic video driver
Rescue installed system
Boot from local drive
Memory test

Press [Tab] to edit options

Automatic boot in 46 seconds...

CentOS 6
Community ENTERprise Operating System



Welcome to CentOS for x86_64



<Tab>/<Alt-Tab> between elements : <Space> selects : <F12> next screen

CentOS 6
Community ENTERprise Operating System



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What language would you like to use during the installation process?

Arabic (العربية)
Assamese (অসমীয়া)
Bengali (বাংলা)
Bengali(India) (বাংলা (ভারত))
Bulgarian (Български)
Catalan (Català)
Chinese(Simplified) (中文 (简体))
Chinese(Traditional) (中文 (正體))
Croatian (Hrvatski)
Czech (Čeština)
Danish (Dansk)
Dutch (Nederlands)
English (English)
Estonian (eesti keel)
Finnish (suomi)
French (Français)
German (Deutsch)
Greek (Ελληνικά)
Gujarati (ગુજરાતી)
Hebrew (עברית)
Hindi (हिन्दी)
Hungarian (Magyar)
Icelandic (Icelandic)
Iloko (Iloko)
Indonesian (Indonesia)

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What type of devices will your installation involve?

Basic Storage Devices

- ☒ Installs or upgrades to typical types of storage devices. If you're not sure which option is right for you, this is probably it.

Specialized Storage Devices

- ☐ Installs or upgrades to enterprise devices such as Storage Area Networks (SANs). This option will allow you to add FCoE / iSCSI / zFCP disks and to filter out devices the installer should ignore.

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Storage Device Warning



The storage device below may contain data.



Virtio Block Device

10240.0 MB pci-0000:00:05.0-virtio-pci-virtio1

We could not detect partitions or filesystems on this device.

This could be because the device is **blank**, **unpartitioned**, or **virtual**. If not, there may be data on the device that can not be recovered if you use it in this installation. We can remove the device from this installation to protect the data.

Are you sure this device does not contain valuable data?

☒ Apply my choice to all devices with undetected partitions or filesystems

Yes, discard any data

No, keep any data

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Please name this computer. The
hostname identifies the computer on a
network.

Hostname:

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hostname identifies the computer on a network.

Hostname:

Network Connections

Wired

Wireless

Mobile Broadband

VPN

DSL

Name	Last Used
System eth0	never

Add

Edit...

Delete...

Close

[Configure Network](#)

[< Back](#)

[Next >](#)

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[Next >](#)



Please name this computer. The hostname identifies the computer on a network.

Hostname:

Editing System eth0

Connection name:

☐ Connect automatically

Wired

802.1x Security

IPv4 Settings

IPv6 Settings

Device MAC address:

Cloned MAC address:

MTU:

bytes

☒ Available to all users

Cancel

Apply...

[Configure Network](#)

[< Back](#)

[Next >](#)



Please name this computer. The hostname identifies the computer on a network.

Hostname:

Editing System eth0

Connection name:

☒ Connect automatically

Wired 802.1x Security IPv4 Settings IPv6 Settings

Device MAC address:

Cloned MAC address:

MTU: bytes

☒ Available to all users

Cancel

Apply

Configure Network

Back

Next



Please name this computer. The hostname identifies the computer on a network.

Hostname:

Editing System eth0

Connection name:

☒ Connect automatically

Wired

802.1x Security

IPv4 Settings

IPv6 Settings

Device MAC address:

Cloned MAC address:

MTU: bytes

☒ Available to all users

Cancel

Apply...

[Configure Network](#)

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Please name this computer. The hostname identifies the computer on a network.

Hostname:

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Wired

Wireless

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DSL

Name	Last Used
System eth0	never

Add

Edit...

Delete...

Close

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[Next >](#)



Please name this computer. The hostname identifies the computer on a network.

Hostname:

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Please select the nearest city in your time zone:



Selected city: New York, America (Eastern Time)

America/New York

☒ System clock uses UTC

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The root account is used for administering the system. Enter a password for the root user.






Root Password:

Confirm:

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Which type of installation would you like?

- ☒  **Use All Space**
Removes all partitions on the selected device(s). This includes partitions created by other operating systems.
Tip: This option will remove data from the selected device(s). Make sure you have backups.
- ☐  **Replace Existing Linux System(s)**
Removes only Linux partitions (created from a previous Linux installation). This does not remove other partitions you may have on your storage device(s) (such as VFAT or FAT32).
Tip: This option will remove data from the selected device(s). Make sure you have backups.
- ☐  **Shrink Current System**
Shrinks existing partitions to create free space for the default layout.
- ☐  **Use Free Space**
Retains your current data and partitions and uses only the unpartitioned space on the selected device(s), assuming you have enough free space available.
- ☐  **Create Custom Layout**
Manually create your own custom layout on the selected device(s) using our partitioning tool.

- ☐ Encrypt system
- ☐ Review and modify partitioning layout

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Writing storage configuration to disk



The partitioning options you have selected will now be written to disk. Any data on deleted or reformatted partitions will be lost.

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Write changes to disk

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The default installation of CentOS is a minimum install. You can optionally select a different set of software now.

- ☐ Desktop
- ☒ Minimal Desktop
- ☐ Minimal
- ☐ Basic Server
- ☐ Database Server
- ☐ Web Server
- ☐ Virtual Host
- ☐ Software Development Workstation

Please select any additional repositories that you want to use for software installation.

☒ CentOS

 [Add additional software repositories](#)

 [Modify repository](#)

You can further customize the software selection now, or after install via the software management application.

☒ [Customize later](#) ☐ [Customize now](#)

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LAS Interviews RMS

Watch Video

Aalto Interviews Linus

Watch Video

Homework

Answers to these questions are in the assigned reading

1. What is **Linux**?
2. What is **Slackware**?
3. What is **CentOS** ?
4. What is the **GNU**?
5. What is the **FSF**?
6. What is the **GPL**?
7. What is the **OSI**?
8. What is the major difference between **GPL** and the **BSD License**?
9. Who is **Richard Stallman**?
10. Who is **Linus Torvalds**?